CLAIMS

1.   A method of facilitating Push-to-talk over Cellular (PoC) communication sessions between mobile stations, comprising:

maintaining a first Push-to-talk over Cellular (PoC) communication session between a first user group; and

concurrently maintaining a second PoC communication session between a second user group, the second user group having at least one common member with the first user group.

2.   The method of claim 1, wherein the second user group has at least one member which is not included in the first user group.

3.   The method of claim 1, wherein all members of the second user group are included in the first user group.

4.   The method of claim 1, being performed by a PoC server of a communication network.

5.   The method of claim 1, being performed by a mobile station corresponding to the at least one common member.

6.   The method of claim 1, wherein the method is embodied in a computer program product comprising a computer storage medium and computer instructions stored in the computer storage medium.

7.   The method of claim 1, further comprising:

prior to concurrently maintaining the second PoC group communication session, receiving or sending an invitation for the second PoC group communication session; and

wherein the act of concurrently maintaining the second PoC group communication session is in response to an invitation acceptance to the second PoC group communication session.

5   8.   The method of claim 1, further comprising:

receiving an end user selection for communications associated with only one of the first and the second PoC group communication sessions at a time; and

in response to the end user selection, causing data packets of only the selected PoC group communication session to be processed for communications.

10

9.   The method of claim 1, further comprising:

receiving an end user selection for communications with both the first and the second PoC group communication sessions at the same time; and

in response to the end user selection, causing data packets of both the first and
15   second PoC group communication sessions to be processed for communications.

10.   The method of claim 1 being performed by a mobile station which corresponds to the at least one common member, the method further comprising:

during the maintaining of the first and the second PoC communication
20   sessions:

receiving first data packets of the first PoC communication session and second data packets of the second PoC communication session; and

causing audible signals of only one of the first and the second PoC communication sessions to be heard at the mobile station.

25

11.   The method of claim 1 being performed by a mobile station which corresponds to the at least one common member, the method further comprising:

during the maintaining of the first and the second PoC communication sessions:
30   receiving first data packets of the first PoC communication session and second data packets of the second PoC communication sessions; and

causing audible signals of the first and the second PoC communication sessions to be heard simultaneously at the mobile station.

12. The method of claim 1 being performed at a PoC server location, the method further comprising:

during the maintaining of the first and the second PoC communication sessions:

receiving first data packets of the first PoC communication session and second data packets of the second PoC communication session; and

sending only one of the first and the second data packets to the at least one common member.

13. The method of claim 1 being performed at a PoC server location, the method further comprising:

during the maintaining of the first and the second PoC communication sessions:

receiving first data packets of the first PoC communication session and second data packets of the second PoC communication sessions;

causing audible signals of the first and the second PoC communication sessions to be combined into resulting data packets; and

sending the resulting data packets to the at least one common member.

14. The method of claim 1, further comprising:

receiving encrypted data packets of the second PoC communication session;

if a key for the encrypted data packets for the second PoC communication session is known, decrypting the encrypted data packets for the second PoC communication session; and

if the decryption key of the encrypted data packets for the second PoC communication session is unknown, refraining from decrypting the encrypted data packets for the second PoC communication session.

15. The method of claim 1, further comprising:

visually displaying an indication which indicates which one of the first and the second PoC group communication sessions is being processed for communications.

16. A mobile station, comprising:

a wireless transceiver;

one or more processors coupled to the wireless receiver;

the one or more processors being operative to:

maintain a first Push-to-talk over Cellular (PoC) communication session between a first user group; and

concurrently maintain a second PoC communication session between a second user group, the second user group having at least one common member with the first user group.

17. The mobile station of claim 16, wherein the second user group has at least one member which is not included in the first user group.

18. The mobile station of claim 16, wherein all members of the second user group are included in the first user group.

19. The mobile station of claim 16, wherein the one or more processors are further operative to:

prior to concurrently maintaining the second PoC group communication session, receive or send an invitation for the second PoC group communication session; and

wherein concurrently maintaining the second PoC group communication session is in response to an invitation acceptance to the second PoC group communication session.

20. The mobile station of claim 16, wherein the one or more processors are further operative to:

receive an end user selection for communications associated with only one of the first and the second PoC group communication sessions at a time; and

in response to the end user selection, cause data packets of only the selected PoC group communication session to be processed for communications.

21.   The mobile station of claim 16, wherein the one or more processors are further operative to:

receive an end user selection for communications with both the first and the second PoC group communication sessions at the same time; and

in response to the end user selection, cause data packets of both the first and second PoC group communication sessions to be processed for communications.

22.   The mobile station of claim 16, wherein the one or more processors are further operative to:

during the maintaining of the first and the second PoC communication sessions:

receive first data packets of the first PoC communication session and second data packets of the second PoC communication session; and

cause audible signals of only one of the first and the second PoC communication sessions to be heard at the mobile station.

23.   The mobile station of claim 16, wherein the one or more processors are further operative to:

during the maintaining of the first and the second PoC communication sessions:

receive first data packets of the first PoC communication session and second data packets of the second PoC communication sessions; and

cause audible signals of the first and the second PoC communication sessions to be heard simultaneously at the mobile station.

24.   The mobile station of 16, wherein the one or more processors are further operative to:

receive encrypted data packets of the second PoC communication session;

decrypt the encrypted data packets for the second PoC communication session, if a key for the encrypted data packets for the second PoC communication session is known; and

refrain from decrypting the encrypted data packets for the second PoC
5   communication session, if the key of the encrypted data packets for the second PoC communication session is unknown.

25.   A Push-to-talk over Cellular (PoC) server of a wireless communication network, comprising:
10   one or more processors;

memory;

computer instructions stored in memory;

the one or more processors being operative in accordance with the computer instructions to facilitate Push-to-talk over Cellular (PoC) communication sessions
15   between mobile stations by:

maintaining a first Push-to-talk over Cellular (PoC) communication session between a first user group; and

concurrently maintaining a second PoC communication session between a second user group, the second user group having at least one
20   common member with the first user group.

26.   The PoC server of claim 25, wherein the second user group has at least one member which is not included in the first user group.

25   27.   The PoC server of claim 25, wherein all members of the second user group are included in the first user group.

28.   The PoC server of claim 25, further comprising:

a first session ID corresponding to the first user group stored in the memory;
30   and

a second session ID corresponding to the second user group stored in the memory.

29. The PoC server of claim 25, wherein the one or more processors are further operative for, during the maintaining:

sending data packets of the first PoC communication session to the at least one

5   common member; and

sending data packets of the second PoC communication session to the at least one common member.

30. The PoC server of claim 25, wherein the one or more processors are

10   further operative for:

receiving an end user selection for communications associated with only one of the first and the second PoC group communication sessions at a time; and

in response to the end user selection, causing data packets of only the selected PoC group communication session to be processed for communications.

15

31. The PoC server of claim 25, wherein the one or more processors are further operative for:

receiving an end user selection for communications with both the first and the second PoC group communication sessions at the same time; and

20   in response to the end user selection, causing data packets of both the first and second PoC group communication sessions to be processed for communications.

32. The PoC server of claim 25, wherein the one or more processors are further operative to:

' 25   receiving encrypted data packets of the second PoC communication session.

33

34.   In a mobile station, a method of processing Push-to-talk over Cellular (PoC) communication sessions comprising the acts of:

maintaining a first Push-to-talk over Cellular (PoC) group communication

30   session;

receiving or sending an invitation into a second PoC group communication session;

receiving an invitation acceptance which accepts the invitation into the second PoC group communication session; and

in response to the invitation acceptance, facilitating the participation into the second PoC group communication session without terminating the first PoC group
5   communication session.

35.   The method of claim 34, further comprising:

receiving an end user selection for communications with only one of the first and the second PoC group communication sessions; and
10   in response to the end user selection, causing only data packets associated with the selected session to be processed for communications.

36.   The method of claim 34, further comprising:

receiving an end user selection for communications with both the first and the
15   second PoC group communication sessions; and

in response to the end user selection, causing data packets associated with both the first and the second PoC group communication sessions to be processed for communications.

37.   The method of claim 34, further comprising:
20

visually display which one of the first and the second PoC group communication sessions is being processed for communications.

25